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(54) MOLD FOR PRECISION CASTING AND PRODUCTION THEREOF

(57) Abstract:

PURPOSE: To stably produce a mold for precision casting by using investment material having silica powder and metallic powder developing volume expansion caused by chemical reaction as essential component, as the material of the mold for precision casting.

CONSTITUTION: At the time of producing the mold for precision casting, a pattern 1 is produced by using the investment material mixing the powder of 20W95wt.% fused silica powder and ≤ 80 wt.% metallic powder of Fe, Ti, etc., which the volume is expanded caused by chemical reaction with heating oxidation, chloridization, sulfurization, etc., and 0.5W5.0wt.% $MgCl_2$, $MgSO_4$, etc., as binder, and kneading with water. A wax pattern 20 obt'd. by sticking wax sheet 10 having about 0.4mm thickness at the front face of the pattern 1, is laid in the forming flask 11. Next, the above investment material 13 is flowed into the forming flask 11 and hardened. This hardened block 14 is taken out from the forming flask 11 heated in a heating furnace to flow out the wax sheet 10 and the molten metal is cast into the formed space 15. In this case, the hardened block 14 is expanded at the time of

burning, and the shrinkage rate at the time of solidifying cast metal is canceled and the precision casting having excellent dimensional and shaped accuracy is obt'd.

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